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Abstract

Method and Composition for Nutritional
Supplementation During Exercise and Recovery

A supplement containing lactic acid salts and/or polymers, and optionally simple and/or complex carbohydrates, is employed to promote energy supply, fluid and electrolyte balance, blood glucose homeostasis, blood pH buffering and muscle as well as liver glycogen storage during and after strenuous exercise. The disclosed composition takes advantage of the presence of sodium-mediated intestinal lactate and glucose transporters, intestinal conversion of glucose to lactate, hepatic formation of glycogen from lactate, the preferential uptake of lactate for fuel by cardiac and red skeletal muscles, the alkalinizing effect of the combustion of lactate to CO_2 and H_2O and conversion to glucose of glycogen, and the presence of a sarcolemmal (muscle cell membrane) lactate/hydrogen ion (symport) transport protein to provide beneficial nutritional supplementation during exercise and subsequent recovery.